

# Prescribed Fire

Tennessee Department of Agriculture, Division of Forestry



Fire has always been an important part of our ecosystem. Until a few decades ago it was widely used (and misused) as a tool in managing rural land. Since then, land use and attitudes have changed a great deal. Fire is largely absent and is often frowned upon. Yet prescribed fire is a valuable tool for farm and forest managers. More widespread use of prescribed fire could:

- improve habitat for quail, turkey, deer and other wildlife
- allow fire dependent flowers, grasses and trees (such as the increasingly rare table mountain pine) to regenerate
- reduce wildfire risk
- improve the looks and manageability of pine stands

**Agricultural burning** is used to dispose of stubble and to maintain warm-season grass pastures and wildlife food plots. This is the easiest type of prescribed burning, and is of most interest to landowners.

Prescribed fire benefits deer, turkey, quail and other birds by regenerating nutritious browse, increasing the number of food insects, clearing the ground between grass clumps, and favoring legumes.

**Under-burning** in pine stands reduces wildfire hazard, increases visibility and ease of access, and improves habitat for turkey, quail and deer. It can also help regenerate oak, but this is still experimental and is not recommended, as it easily damages hardwood timber. Pines should be at least 5" diameter at breast height and 30' tall (normally about 10 years old.) Strive for a slow, backing fire (flames burning away from unburned fuels) during cool weather. Beware of dry vines, cedars, needles, fallen trees etc. that can carry flames into the tree tops. A cautious novice with plenty of help should be able to safely under-burn an open pine stand on gentle terrain.

**Slash burning** is one way to prepare cut-over land for tree planting, and to reduce fire hazard. It is usually more difficult than field burning or under-burning, and is best left to someone with considerable knowledge and experience.

There are alternatives to slash burning. Perhaps your land can be planted despite the slash. Ask a forester or tree planting contractor.

When considering whether to use prescribed fire, a landowner should ask

- What do I want to accomplish?
- What are my alternatives?
- What are the costs and risks of each option?

Reliable debris burning contractors are available in many areas. In some locales, Forestry Division crews might also be available for a fee to construct firebreaks and sometimes to do the burning.

**Burn in winter or early spring when the fuel moisture and weather are right.** Leaves, grass and weeds, and small branches should be dry, but the soil and interiors of large branches should be moist. Burn native warm season grasses prior to their second growing season.

Winds should be light and steady. Light winds may be desirable or even necessary to "carry" the fire in humid fuels. Burning when there is a thermal inversion (stagnant air) can prevent smoke from rising and dispersing as it should. A good time to burn is often the day following passage of a front, when winds are light and uniform and the weather is cool.

*Strong winds are dangerous.* They can quickly increase fire intensity and rate of spread. Embers whipped up by the wind can start spot fires, and shifting winds can cause a fire to explode in a new direction. Stop if a strong wind comes up, even if you have a permit.

Wind can be your greatest problem or your greatest asset. Winds are especially strong and shifting when a cold front is approaching. Watch the weather and weather patterns. You can keep informed by purchasing an inexpensive radio tuned to the NOAA weather channel. (Available at many electronics stores.)

**Call your local Forestry Division** office to get a free **burning permit**, issued over the phone. Permits are required October 15 to May 15 (sometimes longer). **Notify your neighbors** (required by law) and local fire department.

**Cut a firebreak** all around the area to be burned. It must be to mineral soil, at least 2 feet wide in leaves and short grass, or at least 5 feet wide through tall grass and brush.

Have the **right equipment and enough help**. For easy jobs such as burning game strips or food plots, you should have hand tools, water and several people as a minimum. For larger or more difficult jobs, a dozer or tractor, water truck with a pump, and plenty of hands are highly recommended. "Fusees" – emergency flares – are good ignition sources.

These dangers should not discourage landowners from conducting simple prescribed burns, so long as they follow the steps outlined in this bulletin. On the other hand, it is highly advisable to leave slash burning or difficult under-burning to foresters or reliable contractors.

**Begin in a "test corner"** where you can safely observe fire/smoke behavior and easily put the fire out if it doesn't burn as expected.

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Set the fire in narrow strips (about 20-30 feet apart on gentle slopes and light fuel, closer in heavy fuels and on slopes), working ***DOWNHILL and INTO THE WIND***. Don't light more at one time than you can handle.

**Think safety.** Have escape routes planned, don't get trapped, watch the weather, don't hurry.

Don't leave until the fire is **out** (no smoke) and **check the surrounding area** for spot fires.

#### **Control smoke**

- Burn on days when smoke will rise and disperse. If the smoke hangs near the ground, burn in small blocks.
- Estimate smoke dispersion by plotting lines downwind at 45 degree angles from the *edges* of the burn. Strip-burning of light fuels can noticeably affect locations 5 miles away, and night smoke drainage can affect locations 2-3 miles away in valley bottoms. **Do not burn if critical areas, such as highways, are within ½ mile of a light burn (further for a heavy slash burn.)** These are minimum guidelines. Use good judgement!
- Start early to reduce night smoke drainage.
- Dirty windrows of slash tend to smoke a long time; piles burn faster.
- Mop up along roads first to reduce safety hazard and visual impact.
- Smoke tends to flow down drainages at night. Be aware of roads and houses that this might affect. Try to finish burning 2 hours before sunset.
- Have an emergency plan if weather suddenly changes; be able to extinguish the fire.

Keep in mind that an escaped fire can result in

- Citation for reckless burning
- Payment of fines, suppression costs, court costs and damages to adjacent landowners
- Bad feelings between you and neighbors
- Lawsuits from accidents resulting from smoke obscuring a highway
- Loss of a valuable management tool